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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/626,044 | 07/24/2003 | Edward E. Horton III | 713-22-CIP | 1451 |
| 22145 | 7590 | 12/15/2004 | EXAMINER | |
| KLEIN, O'NEILL & SINGH 2 PARK PLAZA SUITE 510 IRVINE, CA 92614 | | | BEACH, THOMAS A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3671 | |

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/626,044

Applicant(s)

HORTON, EDWARD E.

Examiner

Thomas A Beach

Art Unit

3671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07/24/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/06/03.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Priority

1. The first sentence of the specification should be updated to reflect the status of the parent applications as abandoned.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the curves being sinusoidal and two and three dimensional shapes must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beynet et al 4,290,715 in view of Korsgaard 5,553,976. Beynet shows an offshore oil

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well riser system extending from a floating vessel on the sea surface to a sub-sea well equipment located on the sea floor, the riser system having an elongated, substantially vertical section of pipe 20 supported by the floating body and extending downward towards the sea floor; an elongated, substantially horizontal section of pipe 22 connected to the sub-sea well equipment; an angled elbow section of pipe connecting the vertical pipe section to the horizontal pipe section such that the vertical and horizontal pipe sections resiliently flex in a direction generally perpendicular to their respective long axes in response to motion of the floating vessel but does not show an elongated flexing portion of pipe disposed axially within at least one of the vertical and the horizontal pipe sections and arranged therein to resiliently flex in directions both generally perpendicular and parallel to its long axis in response to motion of the floating vessel. However, Korsgaard shows a similar riser structure having an elongated flexing portion of pipe disposed axially within at least one of the vertical and the horizontal pipe sections and arranged therein to resiliently flex in directions both generally perpendicular and parallel to its long axis in response to motion of the floating vessel (col. 4, lines 53-63). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Beynet, as taught by Korsgaard, to include portion of pipe disposed axially within at least one of the vertical and the horizontal pipe (the length of the riser and thus both vertical and horizontal; claim 3) in order to reduce the internal fluid pressure stresses of the riser and the external tension forces, thus reducing the wear of the riser which result in an expensive down time for maintenance of an over stressed riser.

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As concerns claim 2, the combination shows the flexing portion of pipe comprise a plurality of recurvate sections of pipe connected end-to-end with alternating curvatures (figure 5 of Korsgaard).

As concerns claim 4, the combination shows the flexing portion of pipe lies in a single plane (figure 5 of Korsgaard).

As concerns claim 5, the combination shows the flexing portion pipe is generally sinusoidal in shape (figure 5 of Korsgaard).

4. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beynet et al 4,290,715 and Korsgaard 5,553,976 as applied to claim 1 above, further in view of Ledgerwood 3,461,916. The combination fails to show the generally helical in shape, two-dimensional shape, and three dimensional shapes. However, Ledgerwood shows, in figure 3, a similar riser for accommodating motion of a floating body connected to the seafloor wellhead having a substantially vertical riser segment vertical riser or pipe section having the generally helical in shape (claim 6), two-dimensional shape (claim 7), and three dimensional shape (claim 8). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination, as taught by Ledgerwood, to include flex portion of a riser with helical or two and three dimensional shapes in order to improve the strength of the riser or pipe to withstand large amplitudes of vertical and lateral motions, preventing damage to the riser or horizontal pipe, thus reducing down time for repairs (col. 1, lines 32-49).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A Beach whose telephone number is 703.305.4848. The examiner can normally be reached on Monday-Thursday, 8:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Will can be reached on 703.308.3870. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9306 or 703.872.9306 for regular communications and 703.872.9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.306.4198.

Thomas A. Beach

December 12, 2004

